2015
WISCONSIN CANADA GOOSE HARVEST REPORT
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Kent Van Horn
Bureau of Wildlife Management

Taylor Finger
Bureau of Wildlife Management

Brian Dhuey
Bureau of Science Services

Season/ Zone	2015 Estimated Canada Goose Harvest
Early	15,749
Horicon	3,542
Exterior	35,203
TOTAL	**54,494**


WISCONSIN
DEPT. OF NATURAL RESOURCES

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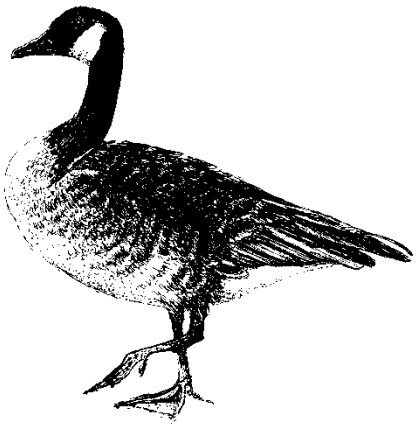


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INTRODUCTION

The management of Canada goose populations and hunting recreation has been a social and biological challenge for the state of Wisconsin since the 1950s (Miller 1998). Continental Canada goose management is based on several different breeding populations. The fall harvest of Canada geese in Wisconsin consists primarily of two populations. One population once referred to as the Mississippi Valley Population (MVP), but hereafter will be referred to as Ontario nesting Canada geese, breeds along the southern Hudson Bay Coast in Ontario and migrates south primarily through Wisconsin and Michigan, and then Illinois, Indiana and western Ohio. Traditionally, many Ontario nesting Canada geese wintered in Kentucky and Tennessee, and sometimes as far south as Mississippi (Brook and Luukkonen 2010, Leafloor et al. 2003). However, in recent years many are wintering as far north as northern Illinois and southern Wisconsin. A second major population of geese contributing to Wisconsin's harvest is the resident or giant race which breeds in WI, hereafter referred to as Temperate Breeding Population of Canada geese (TBP). Based on banding data, a small percentage of Wisconsin's goose harvest (~2%) also comes from the Eastern Prairie, Tall Grass Prairie and Southern James Bay Populations. The Mississippi Flyway Council (MFC) was established in 1952 to work cooperatively among the states, provinces and federal governments in the management of migratory birds and in 1956 the MFC established a Canada Goose Committee to manage the harvest and distribution of several Canada goose populations in the Flyway.

In the 1950s the Ontario nesting Canada geese were the primary population of Canada geese in Wisconsin while the TBP geese were considered nearly extinct in the Flyway. During this period, the Horicon National Wildlife Refuge (NWR) in WI began managing specifically to support migrating Ontario nesting Canada geese during the fall. Landscape changes, Horicon refuge management and an expanded refuge system in Illinois all contributed to an increase in fall/winter Canada goose populations and harvest levels in both states. In 1960 Wisconsin and Illinois agreed to establish a harvest quota system to cooperatively manage goose harvest and despite a number of changes, a quota system remained through 2006. During the early 1960s Ontario nesting geese steadily increased in numbers at Horicon with fall numbers exceeding 100,000 geese and harvest near 1,000 geese per day for only a 9 to 11 day season. This growing fall goose population began to cause significant agricultural crop depredation in WI and complaints by hunters in states to the south that WI was short stopping geese (Miller 1998). In 1965 agricultural damage payments began as a result of goose depredation in east central WI. Over a period of several years in the 1960s; social, political and biological forces surrounded goose management and resulted in actions such as hazing and a harvest of 30,000 geese in 3 days of shooting in 1966. In 1965 the MFC agreed to a winter Flyway population objective of

200,000 and in 1969 this was increased to 300,000. Several states in the Flyway wished to see an increase in the Ontario nesting Canada goose population and a greater distribution of these birds to the south of WI while WI managers continued to express concern over increased goose concentrations in east central WI.

In the 1970s up to 80% (250,000-300,000 birds) of the winter population of those Ontario nesting Canada geese stopped at Horicon and surrounding areas (Miller 1998). Agricultural and biological concerns over this concentration of birds led to the 1976 management strategy to reduce the peak fall population and encourage birds to move south. Altering land management in the Horicon NWR, and increased harvest and disturbance helped to move geese out of the refuge but not necessarily to locations outside of WI. However, many hunters and goose watchers in Wisconsin opposed these efforts to redistribute goose concentrations. A number of biological and political concerns complicated management efforts. In 1979 the MFC prepared the first Flyway-wide management plan for Ontario nesting Canada geese specifically for the MVP in an attempt to create a more scientifically based management strategy. Revisions of this plan continue to guide the management of the MVP population with the most recent revision in 2010 (Brook and Luukkonen 2010). Work is currently underway to create a combined Canada goose management plan for all populations in the flyway.

Meanwhile, a few small remnants of the TBP geese were discovered in southern WI and elsewhere in the Flyway during the 1950s and 1960s. Restoration efforts to increase this population began in the 1960s and involved the releasing of birds from captive reared populations, translocation of birds within and among states and provinces and closure of Canada goose hunting in some areas (MF Giant Canada goose management plan 1996). Now TBP geese are the most abundant subspecies in the Flyway (Leafloor et al. 2003). The increase in the TBP of Canada geese began in urban and rural areas of southeast WI and this remains an area of high resident goose densities. Temperate breeding Canada geese have adapted well to the urban, suburban and agricultural landscapes in Wisconsin and an increasing population was documented from 1986 when WI goose surveys began until about 2011 along with an expanding distribution across the state. With this increasing population and distribution came both problems with agricultural damage and urban nuisance geese as well as increased hunting and viewing opportunities. Most recent harvest derivations indicate that the TBP geese are approximately 40% of the WI regular season Canada goose harvest and nearly all of the early September season harvest. The Wisconsin breeding population of temperate breeders steadily increased during the 1980s and 1990s but stabilized from 2005-2008 and has shown a decreasing trend since 2011.

The MVP Canada goose Management Plan provides the basis for evaluation and management of the Ontario nesting Canada goose population and harvest. The annual harvest quota was being determined using the breeding population estimate (breeding adults) produced by the Ontario Ministry of Natural Resources as a trigger to determine different harvest levels. Based on the

total Ontario nesting Canada goose harvest level, the harvest quota in 2006 was distributed among the major and minor harvest states as follows; WI 35%, IL 33%, MI 20%, KY 12% and the minor harvest states a collective harvest of 80,500 geese. Annual harvest derivations for each state indicated the percentage of the annual Canada goose harvest for each state that comes from the Ontario nesting Canada geese, TBP geese or other populations. While quotas and derivations have varied, it is clear that Wisconsin and Illinois have been most dependent on the Ontario nesting geese to support Canada goose harvest among states in the flyway. The total harvest quota for the state of Wisconsin was determined by applying derivations to the Ontario nesting Canada goose harvest limit. During this period, we were challenged with conflicting trends with and the TBP goose population was increasing while the Ontario nesting Canada geese and overall state goose harvest was declining. This was the system that guided the Canada goose season framework for Wisconsin up until 2006.

Changing Canada Goose Harvest Management in the Mississippi Flyway

Historically, there was an emphasis on maintaining a high abundance of Ontario nesting Canada geese via population objectives and harvest restraint. The simultaneous growth of the TBP goose population provided more harvest opportunities, but has also expanded management challenges (e.g., human-goose conflict). There was some concern that the annual regular hunting season changes intended to reduce harvest on the Ontario nesting Canada geese in low population years also reduced harvest on TBP geese, allowing greater growth of that population. In addition, in the Mississippi Flyway (14 states) nearly 70% of the total Canada goose harvest now consists of the TBP geese. Therefore, one theory was that the TBP geese can "buffer" the Ontario nesting Canada geese and other interior Canada goose populations from harvest impacts in most locations. In order to test this theory, in 2007 the states that harvest the Ontario nesting geese in the flyway set stable seasons for five years. By creating a stable hunting season framework and monitoring outcomes, the ability of the TBP geese to "buffer" the harvest of migrants was tested. On a flyway-wide level, the effects of this new strategy were predicted to increase overall harvest and harvest rate of the TBP geese and thus slow or stabilize their population growth. Predicted effects on migrant goose populations included either an insignificant increase in harvest rate or an initial larger increase in harvest rate followed by declining abundance and declining harvest rate.

This 5 year trial of a stable hunting season was agreed to among the states that harvest Ontario nesting Canada geese in 2007, to determine if we could simplify hunting regulation changes, increase hunting opportunity and increase harvest on TBP Canada geese without negatively impacting the Ontario nesting population. In Wisconsin, we agreed to a 15 day – 5 bird daily bag limit early September Canada goose season, an 85 day – 2 bird daily bag Exterior Canada goose season and a 92 day Horicon season with a 6 bird season limit and a 2 bird daily limit.

Wisconsin's Canada goose harvest system provided excellent tools to monitor harvest as part of the evaluation of this strategy because of the 1-800 mandatory harvest reporting system. During the 5-year trial from 2007-2011 Exterior Zone harvest figures ranged from 31,570-43,958 while under the previous variable season structures of 2003-2006, the harvest ranged from 26,902 – 46,699 (Figure 5). It did not appear that the regulations had a significant impact on total harvest. Changes in annual goose production and fall weather are likely driving much of the total harvest variation observed over these years. With harsh, early winters, Wisconsin's goose hunting season may effectively end, but this actually has a greater impact on the Ontario nesting birds as they are driven south to Illinois where they continue to be hunted. Based on the heavy hunting pressure in Wisconsin early in the season (Figure 6, Figure 7) and low pressure later in the season, adding additional hunting days late in the season has had little impact on total harvest. However, it seems clear that the greatest harvest impact to the Ontario nesting Canada goose population occurs in late September to mid-October.

At the February 2012, Mississippi Flyway Council technical meeting, waterfowl biologists from across the flyway reviewed population status, harvest data and hunter/harvest surveys with the objective of charting the next step in Canada goose hunting regulations based on the prior 5 year stable regulations. Wisconsin's detailed harvest data as reported in this document was important in the evaluation process. Across the Mississippi Flyway, TBP of Canada geese were harvested at a rate of 16% while in Wisconsin we harvested at a rate of 21%. At the same time, the Wisconsin and the Mississippi Flyway breeding populations of TBP of Canada geese had shown an increasing population trend. The steady increase observed from 1993-2000 was at a rate of 7.2% annual growth. However, this rate of increase began to slow and the average increase from 2001-2014 was only 1.2%. This reduction in population growth of the TBP reduced any offset to the Ontario nesting Canada goose harvest. Nonbreeding TBP (1-2 year olds and failed breeders) often migrate north to Ontario for the summer molt in what is called a molt migration. These geese return to Wisconsin and Michigan in September just prior to or with the Ontario nesting birds. Early opening (prior to September 24) regular seasons help to target harvest of these birds and Wisconsin was recognized by the other states as having an effective season structure to provide additional harvest on these migrating TBP geese. With regard to TBP geese it was believed that early opening dates (mid-September), additional hunting days and higher bag limits were all options to increase regular season harvest on TBP geese across the states. The use of these options would vary by state depending on the goals for the other populations of Canada geese harvested in that state.

In contrast to the data related to TBP Canada geese which suggested opportunities for liberalizing hunting season parameters, the Ontario nesting Canada goose data required a cautious approach. Several years of low to moderate production, high adult harvest in 2009 and a steadily declining breeding population trend for the Ontario nesting geese all contributed to a decision to avoid changes that might result in increased harvest. Wisconsin is most dependent upon the Ontario nesting geese (about 60% of regular season harvest) to support our Canada

goose hunting opportunities with Illinois also heavily dependent and Michigan somewhat dependent upon them as well. While breeding ground conditions are likely the primary force driving population change, significant harvest during low population cycles could drive the Ontario nesting geese lower, slow population recovery and reduce hunting opportunity in Wisconsin. It appears that this has been our experience the last several years as the Ontario nesting Canada goose population continues to decline. In Wisconsin, most regular season Canada goose hunting pressure and harvest occurs in late September and October (Figure 6). In the Exterior zone, 83% of the season harvest occurs in the first half of the season prior to November 1 and 82% of the Horicon harvest occurs during the first period (Appendix Table 8). If we decide there is a need to reduce harvest on the Ontario nesting geese then reducing bag limits or hunting days during the late September to mid-October period would have the most benefit.

With the background of mixed results toward TBP and Ontario nesting Canada geese goals, the MFC agreed to a small step toward greater liberalization of Canada goose hunting regulations. The states that share the Ontario nesting geese could increase their regular season Canada goose hunting season length from 85 to 92 days with a 2 bird bag limit or shorten the season to 78 days with a 3 bird daily bag limit. The northern states with high Ontario nesting Canada goose harvest (Wisconsin, Michigan and Illinois) agreed to increase the hunting season length and maintain a 2 bird daily bag limit while the southern states that harvest Ontario nesting geese increased the daily bag limit with a shorter season, recognizing that a greater proportion of their harvest is TBP geese. While this change provided an extra week of harvest opportunity for Wisconsin in 2013, 2014 and 2015, it had a relatively small impact on overall harvest since few hunters hunt geese in December. Less than 1-2% of total harvest occurred during these additional 7 days during 2013, 2014 and 2015 (Appendix Table 11).

Since 2012, there has been a growing interest among some states to simplify the Canada goose regulatory frameworks at the flyway level, reduce Ontario goose monitoring costs and further liberalize regulations. States (Wisconsin, Illinois) more dependent upon Canada goose nesting in northern Ontario expressed concern over this approach. The management of Canada and cackling geese in the Mississippi Flyway is complicated by the need to balance potentially conflicting objectives for arctic, subarctic and temperate-breeding populations. These include maintaining breeding distributions, sustainable populations, ecosystem functions, and multiple benefits and costs within social and economic tolerances. As a result, three flyway committees that managed 3 different subarctic populations were merged into one committee and a new merged monitoring strategy was approved for 2016 which should reduce costs. The Mississippi Flyway Canada goose committee recommended hunting season frameworks that provide flexibility for state and provincial agencies to select regulations to meet local objectives recognizing that dependence on different populations may require different regulations. For 2016, this resulted in a simpler and broader Canada goose regulation framework that allowed state regulations to vary based on the status of the Canada geese that support each state's harvest.

A disproportionate number of Horicon Zone harvested geese are from the Ontario nesting Canada goose population, so there has been a need for special harvest management in this zone. In addition, the Horicon zone provides a unique hunting opportunity with reduced hunter pressure which has been maintained to control harvest. However, the county level harvest data over the last decade also indicated that parts of the Horicon zone were being underutilized. As a result, in 2012 we began to evaluate the possibility of reducing the size of the zone to better represent the core around Horicon Marsh. Following analysis of harvest call-in data and public input, the zone was reduced in size beginning in 2014. This reduced area was the most concentrated area of harvest representing 82% of total zone harvest so it was believed that harvest controls will still be sufficient to protect against over harvest of Ontario nesting Canada geese in this zone. Along with this boundary change, harvest recording regulations for the Horicon Zone were simplified and standardized with the Exterior Zone Canada goose harvest. The Horicon Zone goose hunters began to register their harvest via the goose 1-800 call system used by Exterior Zone and Early season hunters for many years.

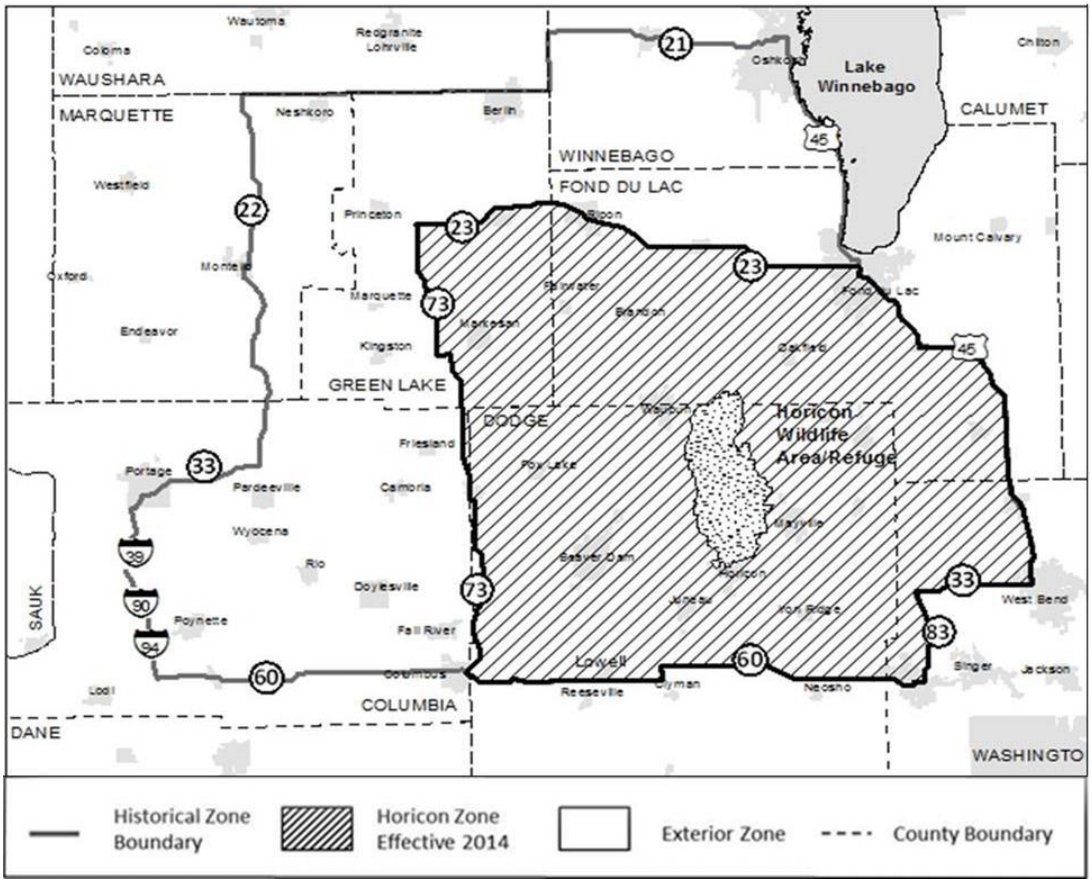

Figure 1. 2014 Horicon Goose Zone Boundary Change

Harvest quantity, distribution and hunter participation are all important pieces of information for the evaluation of these management decisions. This report is a summary of the 2015 management of harvest. Data gathered for this report are based on information from the 1-800 Canada goose harvest registration system and a Horicon zone hunter mail survey. This series of reports has been and continues to be instrumental in making decisions for the management of Canada geese in Wisconsin.

BREEDING POPULATIONS

In 2015, surveys for the geese that nest in northern Ontario indicated below average numbers compared to recent years and remain below the long term average. The adult breeding population was estimated at 226,544, which is 30% below the 2014 estimate of 322,506 and ~35% below the 1989-2014 average of 350,982 breeding birds (Brook and Hughes, June 2015). The minimum breeding population threshold as established by the management plan for those geese that nest in Ontario is 255,000 (Brook and Luukkonen, 2010). In Wisconsin, the 2015 breeding population estimate for TBP geese decreased for the fourth time in the last several years and was at 119,212 and below the previous year's estimate of 126,299 (Van Horn et al. 2015).

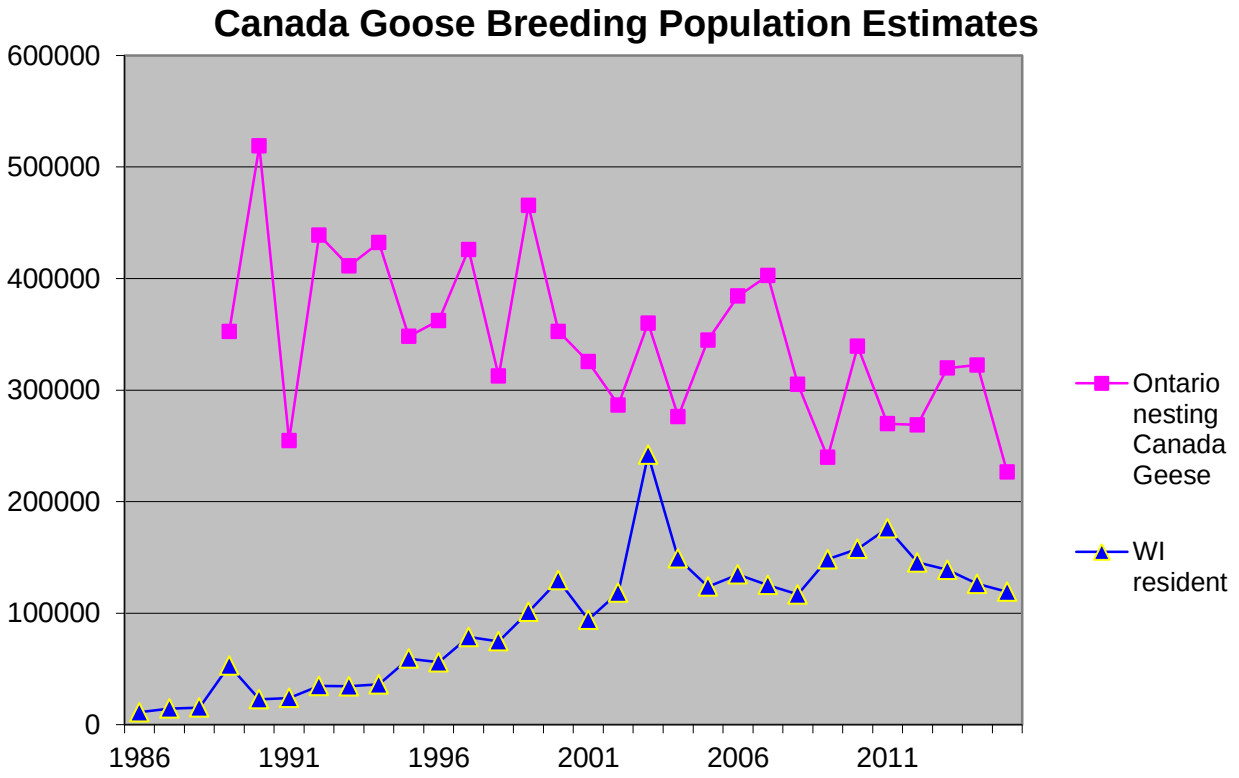

Figure 2.

METHODS

The Wisconsin Department of Natural Resources collects Canada goose harvest data for all zones using call-in reporting. In 2014 the Horicon Zone reporting requirements were changed to make reporting consistent statewide but the Horicon hunter survey was maintained for 2014 and 2015 to provide comparable overlapping data between the 2 systems. In 2016, the Department is merging telephone and internet registration for Canada geese with turkeys, deer and other game species into one consistent system; Go Wild. Harvest registration for Canada geese and other game species can be done by telephone 1-844-426-3734 (844 GAME-REG) or internet at *gamereg.wi.gov.*

1-800 Reporting System

During the 2015 statewide Early September season, Exterior zone and Horicon zone in the regular season, all Canada goose hunters were required to report their harvest using the 1-800-99-GOOSE telephone call-in system within 48 hours. With this system, hunters report the following information: DNR customer number, date of harvest, county of harvest and number of geese harvested. This information is electronically recorded and summarized in a harvest database that is reviewed weekly during the season to track harvest levels. Department law enforcement personnel around the state conduct field checks of Canada goose hunters to assure compliance with the reporting requirement. Results of these field checks provide a compliance rate that is used to adjust the reported harvest to estimate total Canada goose harvest. The level of harvest detail available through this system is not available through any other state or federal database.

Horicon Mail Survey

Canada goose hunters in the Horicon zone were mailed a hunter questionnaire in 2014 and 2015 to obtain harvest information as they have in past years to provide transition data to new collection methods. The questionnaire was sent to 100% of the permit holders and mailed at the end of each time period. Response rates for questionnaires (Appendix Table 1) in the Horicon zone this year and historically has been around 50%. Continuation of the Horicon mail survey in 2014 and 2015 provided overlapping data with the 1-800 harvest registration so we could compare the 2 methods of estimating harvest during the transition from one system to another.

RESULTS AND DISCUSSION

Early September Canada Goose Season Hunter Participation and Harvest

The Early September season is an important part of Wisconsin's Canada goose management program. This season offers hunters an additional recreational experience outside of the regular season and directs harvest pressure onto our TBP Canada geese formerly known as resident giants. In 2015, the season was open from September 1-15 with a 5 bird daily bag limit, which was unchanged from previous years.

The number of applicants for the early season Canada goose permit was 57,009 which was the first time in the last four years that permit numbers decreased from the prior year (Appendix Table 18). Prior to 2003, the number of early permit holders had been steadily increasing. However, in 2004 the Conservation Patron license increased from $110 to $140 and then to $165 in 2005 and the number of patron licenses began declining. We believe this also triggered a several year decline in Canada goose permit holders from 2004-2011 since all conservation patron license holders were provided an early goose permit. We have no data to assess the percent of the total applicants that actively hunt during this period although the federal HIP data suggests relatively stable overall (early and regular season) active Canada goose hunter numbers in Wisconsin the last several years. Conservation patron license customers are offered an early goose permit as part of the combined license package so some of these permit holders may have had little intent to hunt during this season even though they had a permit. The harvest figures for 2015 show that 3,363 hunters were successful in harvesting one or more geese during the early season, which was down from 4,520 in 2014.

At an estimated 15,749 geese, the 2015 early September Canada goose harvest was down from last year. A very warm early September, over 80^{o}F during the first week, is likely the reason for a decline in goose harvest in 2015. All of the counties with the highest early season harvest were similar to 2013 and previous years.

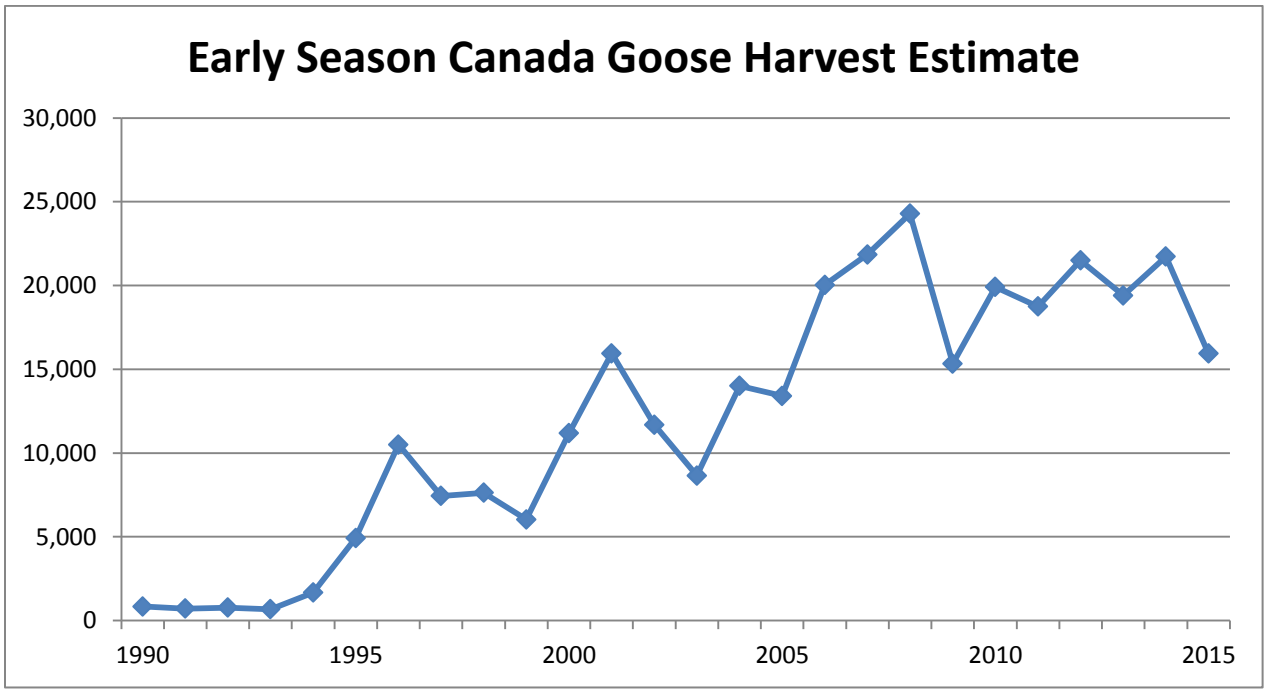

Figure 3.

Table 1.

Top 10 counties - Early Season Harvest - 2015			
County	Rank	Estimated Kill	Percent of Early Total
Dodge	1	738	4.7%
Polk	2	706	4.5%
Manitowoc	3	667	4.2%
Door	4	633	4.0%
Brown	5	555	3.5%
Marathon	6	505	3.2%
Barron	7	487	3.1%
Walworth	8	467	3.0%
Kewaunee	9	449	2.9%
Racine	10	414	2.6%

Regular Season Hunter Participation and Characteristics

In 2015, 83,041 individuals received a Wisconsin Canada goose regular season hunting permit (Exterior or Horicon). This was a decrease of 2,620 or -3.1% from 2014 and marks the first time in the last three years that permit numbers decreased. We simplified the purchase process for the Horicon Zone permits in 2014 so that they could be purchased in the same manner as Exterior permits with no application deadline.

Exterior Zone

Exterior Zone permits totaled 76,134 in 2015 (Figure 4). This represents 92% of the total regular season permits, which is slightly higher than recent years and likely a result of the reduced size of the Horicon Zone. However, we have no associated state estimate of how many hunters were actively hunting geese. Estimates of the number of active Wisconsin goose hunters derived from US Fish and Wildlife Service Harvest Information Program (HIP) estimates for 2015 will not be available until July, 2016; however, federal estimates suggest the number of active Wisconsin Canada goose hunters the last several years have been stable near 40,000-45,000. Previous comparisons of state and federal hunter estimates suggest that about 50% of the Exterior zone permit holders are active goose hunters, which would indicate about 38,000 hunters in the Exterior zone pursued geese.

The number of Exterior goose permits issued, by county of residence, was similar when compared to recent years (Appendix Table 3). In descending order, the counties with the highest number of permits issued were Waukesha, Dane, Outagamie, Winnebago and Brown. These counties also have some of the highest human populations in the state.

Horicon Zone

The Horicon Zone was a large area that included all of Green Lake and parts of Dodge, Fond du Lac, Marquette, Washington and Columbia counties. However, in 2014 the zone was reduced to focus the special Horicon zone harvest management on a small area that supported over 80% of the hunting in the original area. All of Marquette and Winnebago, nearly all of Columbia, 2/3 of Green Lake and a portion of Fond du Lac counties were changed from Horicon to Exterior zone. Horicon zone permit holders received a permit that allows a total season harvest of 12 Canada geese as of 2014 which is up from 6 in 2013 and prior years. We anticipated a drop in permit holders which allowed an increase in harvest per permit holder. There has been a gradual decline in the number of Horicon permits over the last 20 years and in 2015 a similar trend continued with 6,907 permits issued compared to 7,604 in 2014 (Figure 4). The percentage of total regular season hunters represented by the Horicon permits in 2015 was 8% which is lower than in recent years (Appendix Table 2). The percentage of active Horicon zone hunters (those

who actually hunted) from all time periods decreased from 43% in 2014 to 41% in 2015, primarily in Period 1. The mean number of trips taken by active hunters in Period 1 was 4.7 in 2015 while during Period 2, the mean number of trips increased from 4.0 to 4.4 in 2015 (Appendix Table 7). Harvest success of Period 1 active hunters in 2015 was 40% and Period 2 hunter success was 31% which are both up from 2014 but slightly below the previous 4 year average of 44% for Period 1 and 33% for Period 2.

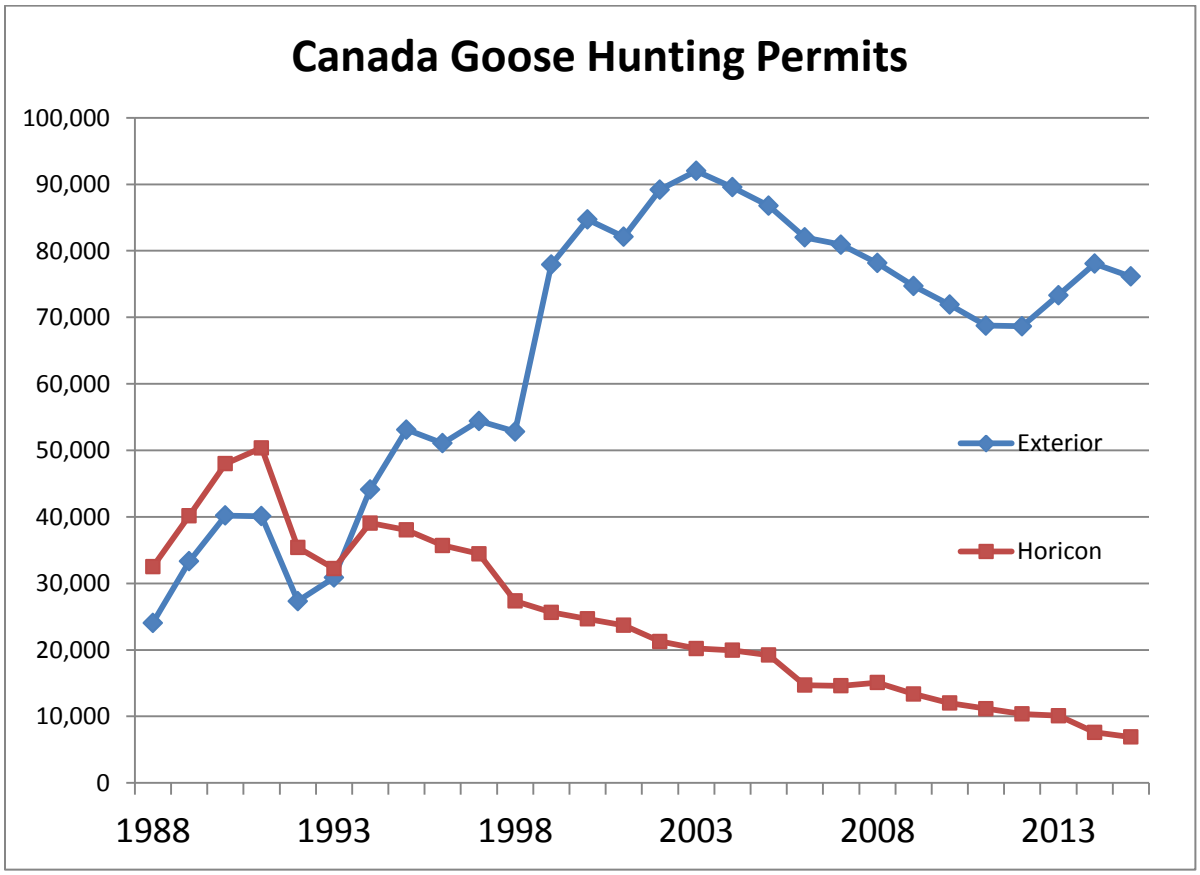

Figure 4.

Horicon zone hunters are primarily hunters that have previous experience in this zone. In 2015, 87% of the Horicon zone hunters had hunted there in 2014, and 93% had previous experience in the zone, which is consistent with other years (Appendix Tables 4 and 5). The Horicon time periods serve to distribute hunter harvest pressure across the fall season. Since 2008, there have been only 2 periods, roughly splitting the 92 days season in half, with no overlap. There is typically a strong preference for time Period 1 (5,192 applicants) compared with only 1,715 applicants for Period 2 (Appendix Table 2) these declining numbers and particularly in Period 2

suggest that eliminating time periods is warranted. About 35% of the Horicon zone hunters reported spending the majority of their time on private lands which is similar to previous years (Appendix Table 16).

Regular Season Harvest

Statewide

The statewide regular season Canada goose harvest in 2015 was 38,745 which is 10% higher than 2014 (Appendix Table 8). The progression of agricultural crop harvest in Wisconsin has a significant impact on Canada goose harvest success. In 2014, agricultural crop harvest was delayed or not completed offering fewer areas to effectively harvest Canada geese. In 2015, agricultural crop harvest was on a more normal schedule and likely contributed to increased goose harvest.

Table 2.

Top 10 counties - Statewide Harvest for 2015
(all zones-regular season)

County	Rank	Estimated Kill	% of Statewide Total
Dodge	1	2,647	6.8%
Brown	2	2,379	6.1%
Outagamie	3	1,873	4.8%
Manitowoc	4	1,720	4.4%
Fond Du Lac	5	1,525	3.9%
Dane	6	1,378	3.5%
Winnebago	7	1,329	3.4%
Waukesha	8	1,245	3.2%
Kewaunee	9	1,240	3.2%
Racine	10	1,049	2.7%

The county level harvest distribution illustrates the continued concentration of geese and goose harvest in areas associated with the Horicon zone (Dodge and Fond du Lac counties) which have high harvest on the Ontario nesting Canada geese (Table 2). In addition, the east-northeast counties of Brown, Manitowoc, Kewaunee, Outagamie and Winnebago represent a region of high Canada goose harvest. The counties with the highest harvest have all been in the top 10 in recent years and the top several have remained largely unchanged.

Exterior Zone

The Exterior Zone represents all areas of the state outside of the Horicon zone. The opening of the Exterior Zone begins the day after the September 15 close of the early goose season. During early September most Canada geese in the state are the locally nesting geese. The Ontario nesting geese begin arriving in Wisconsin the third week of September but do not peak in number until mid-October so starting the Exterior Zone season the day after the early season allows higher harvest on locally nesting geese in this season. In addition, hunter participation and harvest are highest in late September and early October.

The total Exterior zone harvest in 2015 was 35,203 Canada geese which represents 91% of the statewide regular season harvest (Appendix Table 8). This proportion of the statewide total was up from recent years likely resulting from the reduced size of the Horicon Zone and reduced participation there (90% in 2014, 85% in 2013). The harvest was higher than in 2014 and remains within the range of harvest we have seen over the last several years. The list of the top 10 harvest counties was similar to recent years, and represents the southern and eastern portions of the state, excluding those areas in the Horicon zone. These counties also overlap with several of the counties that have the highest human populations, suggesting we are taking advantage of harvest potential in areas where high goose numbers have greater potential to create nuisance problems.

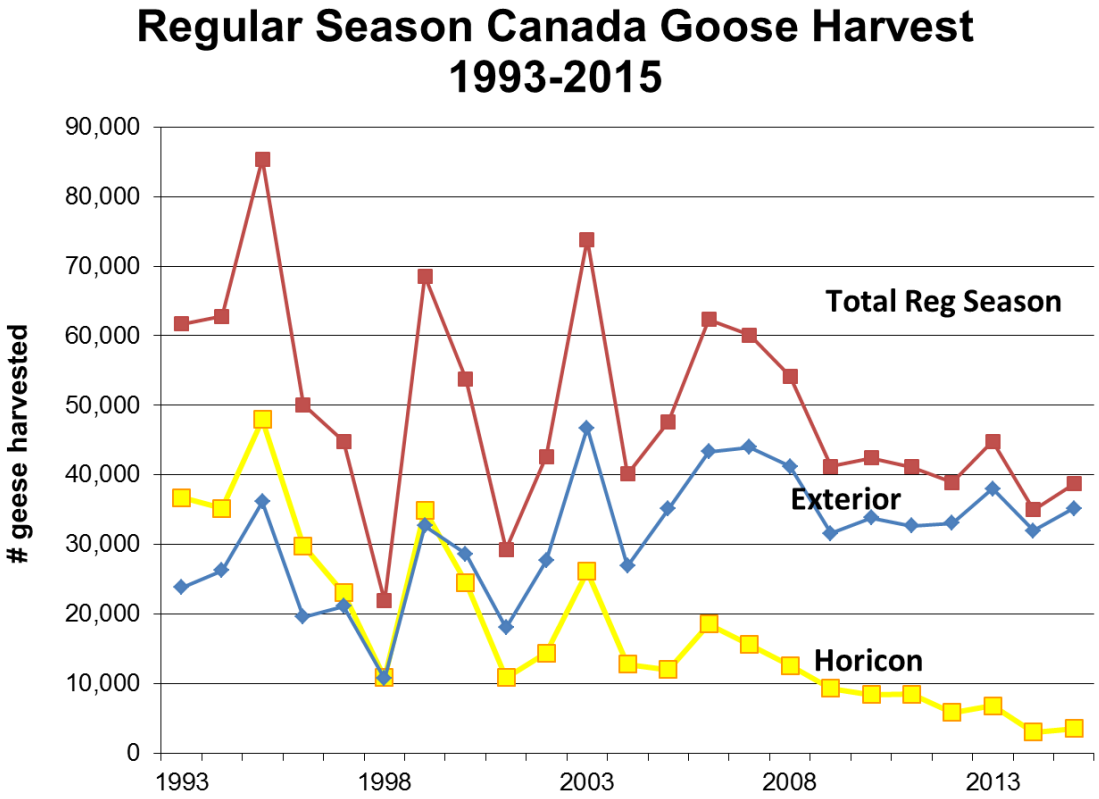

Figure 5.
Note: This figure is based on state estimates

Table 3.

Top 10 counties - Exterior Harvest - 2015

County	Rank	Estimated Kill	% of Exterior Total
Brown	1	2,379	6.6%
Outagamie	2	1,873	5.3%
Manitowoc	3	1,720	4.9%
Dane	4	1,378	3.9%
Winnebago	5	1,329	3.8%
Waukesha	6	1,245	3.5%
Kewaunee	7	1,240	3.5%
Racine	8	1,049	3.0%
Polk	9	1039	3.0%
Marathon	10	966	2.7%

Harvest of Canada geese continues to be highest on weekends and most of the Exterior zone harvest occurs in late September and October (Figure 6 & Appendix Table 11). With the regular opener again on a weekday we saw similar opening day harvest compared to 2014. Daily and weekly harvest levels drop off considerably during November and December when participation is low. In 2015, we experienced a warmer than normal season and hunting conditions were good throughout the month of December. Late season hunting opportunities were available up to the season close although there are relatively few active goose hunters in December. Throughout the season, reports from hunters indicated that geese were often utilizing areas where they were not accessible to hunters (within municipal areas closed to firearm discharge). Canada goose harvest is particularly low during the traditional 9 day gun deer hunting season at the end of November and 2015 was no exception. In 2015, 8,746 individuals (11.5%) harvested at least one goose out of 76,134 Exterior zone permit holders (Appendix Table 15). This proportion has remained relatively unchanged for several years. While these figures may seem low we have no measure of how many of these permit holders actively hunted geese because conservation patron license holders can automatically obtain this permit. Of successful hunters, 30% harvested a single goose and 31% harvested 2 geese. These percentages are similar to 2010-2014.

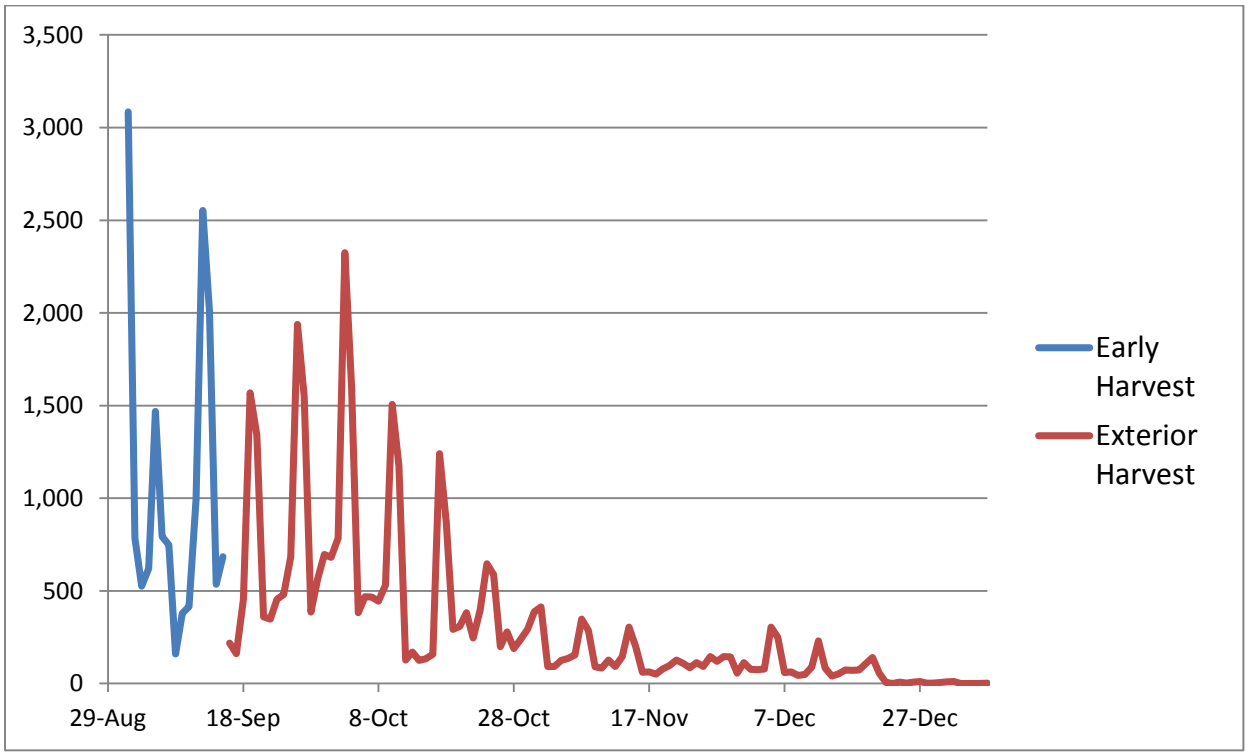

Figure 6.

Horicon Zone

The total Canada goose harvest as reported by the 1-800 mandatory harvest monitoring system for the Horicon Zone in 2015 was 3,542. This made up 9% of the statewide regular season harvest (Appendix Table 8). Harvest was up from 2014 (3,027) but down from other recent years, likely reflecting the reduced size of the zone and fewer hunters. The overall number of Horicon zone permit holders was down from 2014.

With the addition of the Horicon Zone to the 1-800 mandatory harvest reporting system, better and more consistent data is available on daily harvest. Harvest of Canada geese in the Horicon zone, similar to the Exterior, continues to be highest on weekends and most of the Horicon zone harvest occurs in early and mid-October (Figure 7 & Appendix Table 12). Daily and weekly harvest levels drop off considerably during the H2 Period in November and December. In 2015, we experienced a warmer season than normal and hunting conditions were good throughout the month of December. This along with the untypically warm early goose season likely contributed to the increase in harvest compared to 2014. Late season hunting opportunities were available up to the season close although there are relatively few active goose hunters in December. Having observed this pattern for several years we are eliminating the 2 time periods and having just one time period for the Horicon Zone in 2016.

While we incorporated harvest reporting in the Horicon Zone to the 1-800 system in 2014, we continued the mail survey for two more years so that we could compare the two harvest estimates. The mail survey estimated that harvest in the Horicon Zone at 4,151 geese which was 15% higher than the 1-800 estimate of 3,542. This higher harvest estimate is likely a result of unsuccessful Horicon hunters not returning their surveys which would bias the estimate high. Nevertheless the two estimates are similar enough to allow us to compare the future estimates to our past harvest history.

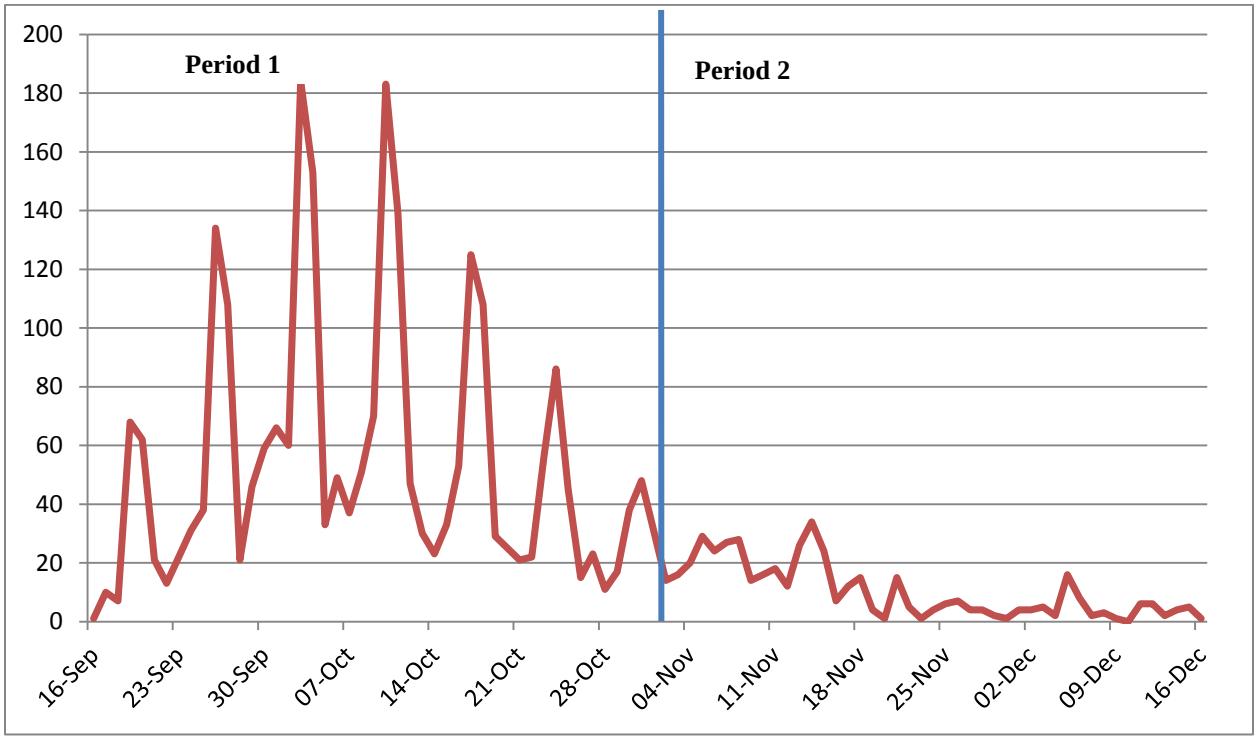

Figure 7

The areas directly adjacent to the Horicon Marsh National Wildlife Refuge and state Wildlife Management area (portions of Dodge and Fond du Lac Counties) continue to represent a high percentage of the Horicon zone harvest, with 93% occurring in these two counties alone. In the past Winnebago and Columbia counties represented a significant portion of the zone's area but contributed relatively little to the harvest. For this reason we removed the area north of Hwy. 23 and west of Hwy 73 from the Horicon zone and designated it as part of the Exterior zone effective in 2014.

In the second year of the size reduction of the Horicon Zone, it appears that harvest levels in that area differ little from what was experienced across the state. The harvest success of Wisconsin Canada goose hunters varies from year to year based on weather, crop harvest timing, migration and goose populations. The overall statewide Canada goose harvest declined by 4% from 2014, which is within normal variation. Of the 5 counties that gained Exterior Zone area resulting from the boundary change, Washington is the only one that showed a harvest decrease when compared to 2014. As expected, the number of Horicon Zone hunters continued to decline but the zone boundary change likely contributed to a steeper decline in 2014.

Table 4.

Counties affected by boundary change		Columbia	Dodge	Fond du Lac	Green Lake	Marquette	Washington	Winnebago		Total
2013	Horicon	253	4090	1350	470	174	259	203		6799
	Exterior	362	257	382	1	318	885	925		3130
	Total	**615**	**4347**	**1732**	**471**	**492**	**1144**	**1128**		**9929**
2014	Horicon	2	2459	863	45	0	221	0		3590
	Exterior	710	292	558	258	540	738	902		3998
	Total	**712**	**2751**	**1421**	**303**	**540**	**959**	**902**		**7588**
2015	Horicon	10	2327	972	52	0	181	0		3542
	Exterior	776	320	553	265	528	689	1329		4460
	Total	**786**	**2647**	**1525**	**317**	**528**	**870**	**1329**		**8002**

MANAGEMENT IMPLICATIONS

Two primary populations of Canada geese are found in Wisconsin during the fall and winter; the Temperate Breeding Population of Canada geese which nest in Wisconsin and adjacent states and the northern Ontario nesting Canada geese formerly referred to as the Mississippi Valley Population (MVP). The management of the Ontario nesting Canada geese is guided by a cooperative management plan among several states and Ontario and is acknowledged by the US Fish and Wildlife Service for management of this population (Brook and Luukkonen 2010). Similarly, the management of the giant Canada goose population (Temperate Breeding Population) in the Mississippi Flyway is also guided by a cooperative management plan (Zenner et al. 1996). Wisconsin's Canada goose management is guided by these 2 plans as well as the Wisconsin Waterfowl Strategic Plan 2008-2018 (Van Horn and Benton 2007). The goal of Canada goose management in Wisconsin is to manage the two populations in a way that balances the different and sometimes conflicting societal perspectives of Canada geese. This goal is reached through the following:

- Provide for both abundant and quality Canada goose hunting opportunities and monitor statewide and local harvest levels. Part of quality hunting opportunities is to simplify hunting regulations at the state and flyway level where possible.
- Work with flyway partners in cooperative monitoring of Ontario and locally nesting Canada goose populations, survival and harvest with the objective of maintaining a higher rate of harvest on locally nesting Canada geese than Ontario nesting Canada geese.
- Address conflicts between abundant Canada goose populations and people through integrated management techniques including hunting where appropriate.

- Seek to manage the statewide Wisconsin breeding population of Canada geese near 125,000.

The monitoring of harvest as described in this report is an important part of implementing these strategies along with annual population surveys, banding efforts and public input.

Ontario nesting Canada geese:

While TBP Canada geese provide about 40% of Wisconsin's regular Canada goose harvest and nearly all of the early season harvest, Wisconsin is still dependent upon the Ontario nesting Canada geese for about 60% of our annual regular season goose harvest. This is in contrast to most other Mississippi Flyway states where over 70% of their Canada goose harvest consists of TBP Canada geese. For example, Minnesota harvests over 90% resident geese and has a much larger population of these birds, which is why regulations may vary even among neighboring states. The Ontario nesting breeding population has been declining slowly over the last 20 years. While there are annual increases and decreases in the population estimate, the population trend is now clearly downward. The rate of adult harvest on the Ontario nesting Canada geese (not including crippling loss) was within or below the targeted range of 8-10% from 2003-2014. However, in years with a late winter and poor nesting conditions, the harvest rate on adult birds increased above this range because fewer young of the year were in the fall flight. Overall, it appears that annual production has not been able to support the harvest demand.

To be consistent with the MVP management plan and in the long-term interest of maintaining the Ontario nesting goose population as a sustainable resource, Wisconsin harvest management decisions need to continue to take steps to maintain a relatively low harvest rate on the Ontario nesting Canada geese in the state. The earlier opening of the Exterior zone Canada goose season provides for the high harvest in the early part of the season but with a lower proportion of Ontario nesting geese. In addition, maintenance of a 2 bird or lower daily bag limit when Ontario nesting geese are present in Wisconsin controls the rate of harvest on this population. Daily harvest records allow us to document this high early harvest and schedule season dates which reduce pressure on the geese that nest in Ontario while maintaining an abundant harvest opportunity. The mid-September opening of the Exterior zone season has allowed Wisconsin to increase harvest but shift it away from the mid-October peak of Ontario nesting goose presence in the state. On the other hand the high harvest during a period when new Ontario nesting birds are just arriving in the state makes them more vulnerable to harvest. Based on the variability of breeding ground conditions and the relatively low and stable harvest rates, it appears that the Ontario nesting Canada goose population change is driven primarily by breeding conditions and not by harvest; however, because of periods of low recruitment there is still a need to remain cautious about Ontario nesting goose harvest management. If the downward trend continues,

Wisconsin may need to reduce days or bag limits during the heavy harvest period of September 16- mid-October.

The area around the Horicon Marsh contained within the Horicon zone remains a focal area of Ontario nesting goose migration through Wisconsin, so a shift in harvest pressure from this area to other parts of the state is helpful in reducing the harvest rate on this population. Over the last several years, these harvest reports have shown a decline in Horicon zone hunter permits and harvest while maintaining a quality hunting experience. Further, these reports have shown that few hunters (~5%) fill the maximum harvest tags during the entire season demonstrating that this regulation is not the limiting factor affecting harvest opportunity (Appendix Table 13). Despite the restrictions, about 10.8% of the statewide regular season Canada goose harvest in 2015 came from the 2 counties (out of 72) containing the Horicon Marsh (Dodge and Fond du Lac) so the potential for a high Canada goose harvest in this area remains (Appendix Table 10). This proportion was lower than the nearly 20% level observed in the past.

Temperate Nesting Goose Population

From the early 1980's through about 2011, the Wisconsin nesting population of temperate nesting Canada geese grew and provided an additional hunting resource that is more widely distributed around the state than the Ontario nesting Canada geese. However, this increase also generated considerable conflict between abundant geese present year round and human outdoor activities. Many of the same management strategies designed to reduce harvest on Ontario nesters were also intended to provide hunters with an opportunity to harvest the increasing local Canada goose resource and help address human-goose conflicts. We have liberalized and simplified Canada goose harvest regulations over the last several years, eliminated subzone restrictions and now have the maximum number days (107) of Canada goose hunting allowed by international treaty. The last five year average harvest rate on TBP Canada geese in Wisconsin was over 21%, indicating that our current season structure has helped us reach our goal of increased harvest pressure on locally nesting Canada geese. The 15 days of September hunting in the early season now accounts for roughly 1/3 of the total statewide fall goose harvest. The county level data shown in this report indicate that our early and Exterior zone Canada goose hunting are highest in many of the same counties where our human population is highest and where many Canada goose control operations are requested. However, since 2011 the Wisconsin breeding Canada goose population trend has been declining, suggesting this high harvest rate may not be sustainable.

Agricultural crop damage from Canada geese, particularly during the spring continues to be a concern for farmers in Wisconsin in areas where Canada geese concentrate. Consideration of agricultural damage issues remains important in our overall approach to managing Wisconsin's Canada goose populations. The department can issue a spring agricultural damage permit for those with eligible claims, which authorizes the removal of Canada geese by shooting from May

15-August 31. Applicants must have (or expect to have) crop damage in excess of $1000 and be enrolled in the wildlife damage abatement and claims program. In 2015, 63 spring Canada goose shooting permits were issued and 218 geese were killed.

Similarly, consideration of Canada goose problems in urban areas is another important aspect of management of goose management in Wisconsin. Initially, many of the Wisconsin breeding Canada geese were found in more suburban and urban counties, however, resident breeders continue to increase in distribution across the state. As we monitor breeding populations and harvest we can evaluate our effectiveness at using recreational harvest to assist in managing problems that result from concentrations of Canada geese in urban areas. To target these birds in the fall, the early Canada goose season remains an important part of our management strategy and contributes a significant proportion of the overall harvest. In addition, site specific Canada goose control measures (nest and egg control, adult take) will continue to be implemented in some areas to mitigate nuisance goose problems. The nuisance goose control efforts of US Department of Agriculture - Wildlife Services staff resulted in the removal of 1,957 adult and juvenile Canada geese at 32 sites in 2015; with the majority of these removals occurring in urban centers where hunting does not sufficiently address these urban goose conflicts (Lovell, 2015). Beginning in 2010, in addition to the federal requirement, Wisconsin added its own mandatory reporting for nest and egg depredation permits to better monitor control efforts around the state. In 2015, 126 nest and egg depredation permits were issued with 431 nests treated.

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Appendix - Harvest and Participation Data

Table 1. *Number of surveys mailed, returned, and response rate for the 2015 Canada goose season.*

Zone and Period	# Mailed	# Returned	Percent Response
Horicon 1	5,192	2,461	47.4%
Horicon 2	1,715	931	54.3%
Total	**6,907**	**3,392**	**49.1%**

Table 2. *Permits issued, active hunters, percent active, and number of successful hunters by zone and time period. Active and successful hunters derived from questionnaire data. Percent successful applies to active permit holders, except for Exterior Zone where it applies to all permit holders.*

Zone and Period	Permits Issued (hunters)	Active Hunters	% Active	# Successful	% Successful
Horicon 1	5,192	2,450	47.2%	998	40.7%
Horicon 2	1,715	612	35.7%	190	31.0%
Exterior	76,134			8,746	11.5%
Total	**83,041**			**9,934**	**12.0%**

Table 3. *Number of goose permit applicants by zone and county of residence. (Continued on next page).*

	Horicon		Exterior	
County	**Frequency**	**Percent**	**Frequency**	**Percent**
Adams	3	0.04	177	0.23
Ashland	6	0.08	318	0.42
Barron	17	0.23	1,061	1.39
Bayfield	7	0.1	205	0.27
Brown	59	0.81	2,839	3.73
Buffalo	10	0.14	400	0.53
Burnett	14	0.19	417	0.55
Calumet	18	0.25	638	0.84
Chippewa	30	0.41	847	1.11
Clark	6	0.08	388	0.51
Columbia	200	2.74	1,650	2.17
Crawford	13	0.18	336	0.44
Dane	301	4.13	4,331	5.69
Dodge	1,243	17.05	462	0.61
Door	4	0.05	699	0.92
Douglas	21	0.29	553	0.73
Dunn	17	0.23	574	0.75
Eau Claire	49	0.67	1,037	1.36
Florence	1	0.01	57	0.07
Fond Du Lac	895	12.28	1,114	1.46
Forest	2	0.03	172	0.23
Grant	66	0.91	512	0.67
Green	18	0.25	579	0.76
Green Lake	127	1.74	607	0.8
Iowa	23	0.32	342	0.45
Iron	4	0.05	117	0.15
Jackson	11	0.15	219	0.29
Jefferson	91	1.25	1,885	2.48
Juneau	19	0.26	583	0.77
Kenosha	54	0.74	1,048	1.38
Kewaunee	8	0.11	624	0.82
La Crosse	93	1.28	1,749	2.3
Lafayette	20	0.27	196	0.26
Langlade	7	0.1	319	0.42
Lincoln	31	0.43	635	0.83
Manitowoc	26	0.36	1,657	2.18

	Horicon		Exterior	
County	**Frequency**	**Percent**	**Frequency**	**Percent**
Marathon	46	0.63	1,498	1.97
Marinette	12	0.16	832	1.09
Marquette	15	0.21	569	0.75
Menominee			5	0.01
Milwaukee	506	6.94	2,348	3.08
Monroe	20	0.27	529	0.69
Oconto	18	0.25	820	1.08
Oneida	27	0.37	947	1.24
Outagamie	111	1.52	3,288	4.32
Ozaukee	96	1.32	1,256	1.65
Pepin	3	0.04	147	0.19
Pierce	38	0.52	620	0.81
Polk	27	0.37	1,146	1.51
Portage	35	0.48	1,090	1.43
Price	7	0.1	375	0.49
Racine	87	1.19	2,179	2.86
Richland	12	0.16	163	0.21
Rock	79	1.08	1,781	2.34
Rusk	13	0.18	240	0.32
St. Croix	33	0.45	1,358	1.78
Sauk	53	0.73	1,082	1.42
Sawyer	9	0.12	372	0.49
Shawano	20	0.27	705	0.93
Sheboygan	70	0.96	1,897	2.49
Taylor	5	0.07	329	0.43
Trempealeau	28	0.38	615	0.81
Vernon	55	0.75	451	0.59
Vilas	14	0.19	477	0.63
Walworth	31	0.43	1,264	1.66
Washburn	6	0.08	499	0.66
Washington	532	7.3	1,699	2.23
Waukesha	613	8.41	4,417	5.8
Waupaca	26	0.36	1,164	1.53
Waushara	14	0.19	441	0.58
Winnebago	203	2.78	2,999	3.94
Wood	38	0.52	1,570	2.06
Unknown	398	5.46	2,503	3.29
Non. Resident	477	6.54	3,112	4.09

Table 4. *Goose hunting in past zones.*

Current Zone	Past Horicon	Past Exterior
Horicon	93.1%	6.9%

Table 5. *Percent hunting geese in 2015 that also hunted in 2014.*

Zone	% That Hunted in 2014
Horicon	87.4%

Table 6. *Past and present duck hunting by goose permit.*

Zone	Duck Hunted in 2014	Duck Hunted in 2015
Horicon	63.2%	72.7%

Table 7. *Mean number of hunting trips by zone and time period. Applies to active permit holders only.*

Zone/Period	Mean # of Trips	Maximum # of Trips
Horicon 1	4.7	31
Horicon 2	4.4	33

Table 8. *Harvest by zone and time period. The estimated harvest was derived from questionnaire data in the Horicon zone. Reported harvest in the Horicon and Exterior Zone is from mandatory reporting. The reported harvest for the Horicon and Exterior zone was adjusted by a compliance rate of 85.0% for Horicon and 85.0% for the exterior to obtain the expanded harvest.*

Zone/Period	Estimated Harvest	Reported Harvest	Expanded Harvest
Horicon 1	3,625	2,552	3,002
Horicon 2	526	459	540
Exterior		29,922	35,203
Total	**4,151**	**33,003**	**38,745**

Table 9. *Exterior zone goose harvest by county (continued on next page).*

County	Reported Kill	Expanded Kill	Percent
Adams	218	256	0.73%
Ashland	116	136	0.39%
Barron	503	592	1.68%
Bayfield	101	119	0.34%
Brown	2,022	2,379	6.76%
Buffalo	226	266	0.76%
Burnett	258	304	0.86%
Calumet	695	818	2.32%
Chippewa	402	473	1.34%
Clark	329	387	1.10%
Columbia	660	776	2.21%
Crawford	115	135	0.38%
Dane	1,171	1,378	3.91%
Dodge	272	320	0.91%
Door	793	933	2.65%
Douglas	62	73	0.21%
Dunn	202	238	0.68%
Eau Claire	103	121	0.34%
Florence	35	41	0.12%
Fond Du Lac	470	553	1.57%
Forest	77	91	0.26%
Grant	92	108	0.31%
Green	181	213	0.60%
Green Lake	225	265	0.75%
Iowa	48	56	0.16%
Iron	33	39	0.11%
Jackson	40	47	0.13%
Jefferson	520	612	1.74%
Juneau	169	199	0.56%
Kenosha	612	720	2.05%
Kewaunee	1,054	1,240	3.52%
La Crosse	223	262	0.75%
Lafayette	70	82	0.23%
Langlade	256	301	0.86%
Lincoln	119	140	0.40%
Manitowoc	1,462	1,720	4.89%
Marathon	821	966	2.74%
Marinette	409	481	1.37%
Marquette	449	528	1.50%
Menominee	2	2	0.01%
Milwaukee	15	18	0.05%
Monroe	105	124	0.35%

Table 9. *Exterior zone goose harvest by county (continued on next page).*

County	Reported Kill	Expanded Kill	Percent
Oconto	641	754	2.14%
Oneida	135	159	0.45%
Outagamie	1,592	1,873	5.32%
Ozaukee	696	819	2.33%
Pepin	8	9	0.03%
Pierce	88	104	0.29%
Polk	883	1,039	2.95%
Portage	544	640	1.82%
Price	89	105	0.30%
Racine	892	1,049	2.98%
Richland	54	64	0.18%
Rock	497	585	1.66%
Rusk	191	225	0.64%
Sauk	218	256	0.73%
Sawyer	175	206	0.58%
Shawano	405	476	1.35%
Sheboygan	781	919	2.61%
St. Croix	560	659	1.87%
Taylor	315	371	1.05%
Trempealeau	96	113	0.32%
Vernon	178	209	0.59%
Vilas	31	36	0.10%
Walworth	455	535	1.52%
Washburn	260	306	0.87%
Washington	586	689	1.96%
Waukesha	1,058	1,245	3.54%
Waupaca	839	987	2.80%
Waushara	247	291	0.83%
Winnebago	1,130	1,329	3.78%
Wood	543	639	1.81%
Total	**29,922**	**35,203**	

Table 10. *Horicon Zone goose harvest by county. The estimated harvest was derived from call-in data.*

County	Total Expanded Harvest	% of Harvest
Columbia	10	0.3%
Dodge	2,327	65.7%
Fond du lac	972	27.4%
Green Lake	52	1.5%
Washington	181	5.1%
Total	**3,542**	

Table 11. *Exterior zone goose harvest by date. Bold numbers indicate weekends (continued on the next page).*

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
16-Sep-15	186	219	219	0.6%	0.6%
17-Sep-15	138	162	381	0.5%	1.1%
18-Sep-15	385	453	834	1.3%	2.4%
19-Sep-15	**1,333**	**1,568**	**2,402**	**4.5%**	**6.8%**
20-Sep-15	**1,139**	**1,340**	**3,742**	**3.8%**	**10.6%**
21-Sep-15	305	359	4,101	1.0%	11.7%
22-Sep-15	296	348	4,450	1.0%	12.6%
23-Sep-15	387	455	4,905	1.3%	13.9%
24-Sep-15	408	480	5,385	1.4%	15.3%
25-Sep-15	581	684	6,068	1.9%	17.2%
26-Sep-15	**1,647**	**1,938**	**8,006**	**5.5%**	**22.7%**
27-Sep-15	**1,317**	**1,549**	**9,556**	**4.4%**	**27.1%**
28-Sep-15	328	386	9,941	1.1%	28.2%
29-Sep-15	479	564	10,505	1.6%	29.8%
30-Sep-15	592	696	11,201	2.0%	31.8%
01-Oct-15	579	681	11,883	1.9%	33.8%
02-Oct-15	667	785	12,667	2.2%	36.0%
03-Oct-15	**1976**	**2,325**	**14,992**	**6.6%**	**42.6%**
04-Oct-15	**1363**	**1,604**	**16,596**	**4.6%**	**47.1%**
05-Oct-15	325	382	16,978	1.1%	48.2%
06-Oct-15	398	468	17,446	1.3%	49.6%
07-Oct-15	397	467	17,913	1.3%	50.9%
08-Oct-15	377	444	18,357	1.3%	52.1%
09-Oct-15	451	531	18,888	1.5%	53.7%

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
10-Oct-15	**1,281**	**1,507**	**20,395**	**4.3%**	**57.9%**
11-Oct-15	**999**	**1,175**	**21,570**	**3.3%**	**61.3%**
12-Oct-15	107	126	21,696	0.4%	61.6%
13-Oct-15	144	169	21,865	0.5%	62.1%
14-Oct-15	106	125	21,990	0.4%	62.5%
15-Oct-15	113	133	22,123	0.4%	62.8%
16-Oct-15	134	158	22,281	0.4%	63.3%
17-Oct-15	**1,055**	**1,241**	**23,522**	**3.5%**	**66.8%**
18-Oct-15	**739**	**869**	**24,391**	**2.5%**	**69.3%**
19-Oct-15	248	292	24,683	0.8%	70.1%
20-Oct-15	262	308	24,991	0.9%	71.0%
21-Oct-15	325	382	25,374	1.1%	72.1%
22-Oct-15	209	246	25,619	0.7%	72.8%
23-Oct-15	338	398	26,017	1.1%	73.9%
24-Oct-15	**549**	**646**	**26,663**	**1.8%**	**75.7%**
25-Oct-15	**499**	**587**	**27,250**	**1.7%**	**77.4%**
26-Oct-15	170	200	27,450	0.6%	78.0%
27-Oct-15	237	279	27,729	0.8%	78.8%
28-Oct-15	160	188	27,917	0.5%	79.3%
29-Oct-15	202	238	28,155	0.7%	80.0%
30-Oct-15	249	293	28,448	0.8%	80.8%
31-Oct-15	**330**	**388**	**28,836**	**1.1%**	**81.9%**
01-Nov-15	**352**	**414**	**29,250**	**1.2%**	**83.1%**
02-Nov-15	79	93	29,343	0.3%	83.4%
03-Nov-15	78	92	29,435	0.3%	83.6%
04-Nov-15	106	125	29,560	0.4%	84.0%
05-Nov-15	115	135	29,695	0.4%	84.4%
06-Nov-15	131	154	29,849	0.4%	84.8%
07-Nov-15	**295**	**347**	**30,196**	**1.0%**	**85.8%**
08-Nov-15	**245**	**288**	**30,484**	**0.8%**	**86.6%**
09-Nov-15	77	91	30,575	0.3%	86.9%
10-Nov-15	71	84	30,658	0.2%	87.1%
11-Nov-15	108	127	30,785	0.4%	87.5%
12-Nov-15	78	92	30,877	0.3%	87.7%
13-Nov-15	123	145	31,022	0.4%	88.1%
14-Nov-15	**258**	**304**	**31,325**	**0.9%**	**89.0%**
15-Nov-15	**170**	**200**	**31,525**	**0.6%**	**89.6%**
16-Nov-15	52	61	31,587	0.2%	89.7%
17-Nov-15	53	62	31,649	0.2%	89.9%
18-Nov-15	43	51	31,700	0.1%	90.0%
19-Nov-15	66	78	31,777	0.2%	90.3%
20-Nov-15	83	98	31,875	0.3%	90.5%
21-Nov-15	**107**	**126**	**32,001**	**0.4%**	**90.9%**

Date	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
22-Nov-15	**93**	**109**	**32,110**	**0.3%**	**91.2%**
23-Nov-15	72	85	32,195	0.2%	91.5%
24-Nov-15	96	113	32,308	0.3%	91.8%
25-Nov-15	79	93	32,401	0.3%	92.0%
26-Nov-15	124	146	32,547	0.4%	92.5%
27-Nov-15	102	120	32,667	0.3%	92.8%
28-Nov-15	**124**	**146**	**32,813**	**0.4%**	**93.2%**
29-Nov-15	**122**	**144**	**32,956**	**0.4%**	**93.6%**
30-Nov-15	48	56	33,013	0.2%	93.8%
01-Dec-15	95	112	33,124	0.3%	94.1%
02-Dec-15	65	76	33,201	0.2%	94.3%
03-Dec-15	64	75	33,276	0.2%	94.5%
04-Dec-15	66	78	33,354	0.2%	94.7%
05-Dec-15	**258**	**304**	**33,657**	**0.9%**	**95.6%**
06-Dec-15	**212**	**249**	**33,907**	**0.7%**	**96.3%**
07-Dec-15	51	60	33,967	0.2%	96.5%
08-Dec-15	53	62	34,029	0.2%	96.7%
09-Dec-15	37	44	34,073	0.1%	96.8%
10-Dec-15	42	49	34,122	0.1%	96.9%
11-Dec-15	76	89	34,211	0.3%	97.2%
12-Dec-15	**196**	**231**	**34,442**	**0.7%**	**97.8%**
13-Dec-15	**71**	**84**	**34,526**	**0.2%**	**98.1%**
14-Dec-15	35	41	34,567	0.1%	98.2%
15-Dec-15	44	52	34,619	0.1%	98.3%
16-Dec-15	63	74	34,693	0.2%	98.6%
17-Dec-15	61	72	34,764	0.2%	98.8%
18-Dec-15	62	73	34,837	0.2%	99.0%
19-Dec-15	**91**	**107**	**34,944**	**0.3%**	**99.3%**
20-Dec-15	**119**	**140**	**35,084**	**0.4%**	**99.7%**
21-Dec-15	48	56	35,141	0.2%	99.8%
22-Dec-15	4	5	35,146	0.0%	99.8%
23-Dec-15	1	1	35,147	0.0%	99.8%
24-Dec-15	7	8	35,155	0.0%	99.9%
25-Dec-15	2	2	35,157	0.0%	99.9%
26-Dec-15	**6**	**7**	**35,164**	**0.0%**	**99.9%**
27-Dec-15	**9**	**11**	**35,175**	**0.0%**	**99.9%**
28-Dec-15	2	2	35,177	0.0%	99.9%
29-Dec-15	2	2	35,180	0.0%	99.9%
31-Dec-15	8	9	35,189	0.0%	100.0%
01-Jan-16	9	11	35,200	0.0%	100.0%
02-Jan-16	**1**	**1**	**35,201**	**0.0%**	**100.0%**
06-Jan-16	2	2	35,203	0.0%	100.0%

Table 12. *Weekday of reported kill in percent. Data from mandatory reporting in the Exterior zone and questionnaires in the other zones.*

Zone/ Period	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Horicon 1	22.2%	8.2%	8.1%	8.9%	9.8%	13.8%	29.1%
Horicon 2	12.1%	9.8%	15.5%	14.7%	15.9%	14.0%	18.1%
Horicon Total	**25.3%**	**10.4%**	**8.9%**	**8.6%**	**8.77%**	**13.9%**	**24.2%**
Exterior	22.7%	7.0%	13.1%	8.4%	7.9%	11.1%	29.8%
All Zones	**22.6%**	**7.1%**	**12.9%**	**8.4%**	**8.0%**	**11.2%**	**29.7%**

Table 13. *Number of birds harvested per permit holder and active permit holder by zone. Hunter numbers derived from applications, questionnaires and 1-800 registration.*

Zone	Birds/Permit Holder	Birds/Active Permit Holder
Horicon	0.52	1.36
Exterior	0.46	N/A

Table 14. *Percent of successful bags containing 1 or 2 geese.*

Zone	Period	Percent of 1 Kill Bags	Percent of 2 Kill Bags
Horicon	1	44.6%	55.4%
	2	52.2%	47.8%
	All Periods	**45.8%**	**54.2%**

Table 15. *Exterior Zone season bag derived from mandatory reporting data.*

Bag	# of Hunters	Percent
0	67,388	88.5%
1	2,627	3.5%
2	2,687	3.5%
3	828	1.1%
4	897	1.2%
5	331	0.4%
6	384	0.5%
7	180	0.2%
8	196	0.3%
9	106	0.1%
10	116	0.2%
11	56	0.1%
12	61	0.1%
13	39	0.1%
14	37	0.0%
15	33	0.0%
16	31	0.0%
17	26	0.0%
18	13	0.0%
19	9	0.0%
20	13	0.0%
21	8	0.0%
22	6	0.0%
23	6	0.0%
24	5	0.0%
25	4	0.0%
26	5	0.0%
27	7	0.0%
28	4	0.0%
29	1	0.0%
30	3	0.0%
31	5	0.0%
32	1	0.0%
34	2	0.0%
35	2	0.0%
36	1	0.0%
38	2	0.0%
40	1	0.0%
41	1	0.0%
43	1	0.0%
44	1	0.0%

46	1	0.0%
47	3	0.0%
63	1	0.0%
65	1	0.0%
70	1	0.0%
75	2	0.0%
121	1	0.0%

Table 16. *Percent of time spent hunting private land by zone.*

Zone	No Answer	< 25%	25-49%	50-75%	> 75%
Horicon	56.9%	6.0%	0.6%	1.3%	35.2%

Table 17. *Number of active hunters, percent paying blind access fee, mean days hunted, mean payment per trip, and total access fees paid by zone.*

Zone	Active Hunters	Percent Paying	Mean Days	Mean Payment	Total Paid
Horicon	3,062	29.5%	4.6	$18.37	$76,329.81

Table 18. *Number applicants, active hunters, and birds harvested during the September early Canada goose season.*

Year	# of Applicants	# of Active Hunters	Harvest
1990	19,561	6,408	842
1991	4,772	1,983	712
1992	5,383	2,024	772
1993	2,982	1,636	679
1994	20,724	7,114	1,668
1995	13,343	7,923	4,928
1996	21,378	8,979	10,506
1997	28,761		7,435
1998	29,580		7,627
1999	73,799		6,032
2000	69,716		11,192
2001	74,268		15,952
2002	75,565		11,687
2003	76,728		8,650
2004	76,294		14,007
2005	74,437		13,410
2006	68,152		20,034
2007	66,207		21,760
2008	63,904		24,276
2009	60,567		15,342
2010	55,927		19,900
2011	52,906		18,746
2012	53,596		21,302
2013	55,657		19,407
2014	59,017		21,732
2015	57,009		15,749

Table 19. *Early September Canada goose harvest by date (bold numbers indicate weekends)*.

Date of Harvest	Reported Kill	Expanded Kill	Cumulative Kill	Percent	Cumulative Percent
1-Sep-15	2,621	3,084	3,084	19.6%	19.6%
2-Sep-15	666	784	3,867	5.0%	24.6%
3-Sep-15	446	525	4,392	3.3%	27.9%
4-Sep-15	527	620	5,012	3.9%	31.8%
5-Sep-15	**1,248**	**1,468**	**6,480**	**9.3%**	**41.1%**
6-Sep-15	**674**	**793**	**7,273**	**5.0%**	**46.2%**
7-Sep-15	636	748	8,021	4.8%	50.9%
8-Sep-15	135	159	8,180	1.0%	51.9%
9-Sep-15	322	379	8,559	2.4%	54.3%
10-Sep-15	353	415	8,974	2.6%	57.0%
11-Sep-15	843	992	9,966	6.3%	63.3%
12-Sep-15	**2,170**	**2,553**	**12,519**	**16.2%**	**79.5%**
13-Sep-15	**1,707**	**2,008**	**14,527**	**12.8%**	**92.2%**
14-Sep-15	456	536	15,064	3.4%	95.6%
15-Sep-15	582	685	15,749	4.3%	100.0%
	13,386	15,749			

Table 20. *Early September Canada goose harvest by county, 2015*.

County	Reported Kill	Expanded Kill	Percent
Adams	53	62	0.4%
Ashland	78	92	0.6%
Barron	414	487	3.1%
Bayfield	67	79	0.5%
Brown	472	555	3.5%
Buffalo	157	185	1.2%
Burnett	176	207	1.3%
Calumet	139	164	1.0%
Chippewa	183	215	1.4%
Clark	192	226	1.4%
Columbia	163	192	1.2%
Crawford	165	194	1.2%
Dane	196	231	1.5%
Dodge	627	738	4.7%
Door	538	633	4.0%
Douglas	39	46	0.3%
Dunn	146	172	1.1%
Eau Claire	55	65	0.4%
Florence	31	36	0.2%
Fond Du Lac	188	221	1.4%
Forest	15	18	0.1%
Grant	89	105	0.7%
Green	95	112	0.7%
Green Lake	47	55	0.4%
Iowa	68	80	0.5%
Iron	35	41	0.3%
Jackson	29	34	0.2%
Jefferson	228	268	1.7%
Juneau	55	65	0.4%
Kenosha	303	356	2.3%
Kewaunee	382	449	2.9%
La Crosse	146	172	1.1%
Lafayette	43	51	0.3%
Langlade	57	67	0.4%
Lincoln	100	118	0.7%
Manitowoc	567	667	4.2%
Marathon	429	505	3.2%
Marinette	135	159	1.0%
Marquette	124	146	0.9%

County	Reported Kill	Expanded Kill	Percent
Milwaukee	2	2	0.0%
Monroe	53	62	0.4%
Oconto	180	212	1.3%
Oneida	96	113	0.7%
Outagamie	316	372	2.4%
Ozaukee	111	131	0.8%
Pepin	16	19	0.1%
Pierce	71	84	0.5%
Polk	600	706	4.5%
Portage	271	319	2.0%
Price	136	160	1.0%
Racine	352	414	2.6%
Richland	53	62	0.4%
Rock	244	287	1.8%
Rusk	172	202	1.3%
Sauk	67	79	0.5%
Sawyer	172	202	1.3%
Shawano	146	172	1.1%
Sheboygan	285	335	2.1%
St. Croix	301	354	2.2%
Taylor	336	395	2.5%
Trempealeau	140	165	1.0%
Vernon	136	160	1.0%
Vilas	48	56	0.4%
Walworth	397	467	3.0%
Washburn	285	335	2.1%
Washington	245	288	1.8%
Waukesha	272	320	2.0%
Waupaca	219	258	1.6%
Waushara	53	62	0.4%
Winnebago	252	296	1.9%
Wood	333	392	2.5%

Table 21. *Early September season bag derived from mandatory reporting data, 2015.*

Bag	Number of Hunters	Percent
0	53,646	94.10%
1	866	1.52%
2	620	1.09%
3	468	0.82%
4	300	0.53%
5	477	0.84%
6	117	0.21%
7	106	0.19%
8	67	0.12%
9	58	0.10%
10	90	0.16%
11	34	0.06%
12	36	0.06%
13	25	0.04%
14	18	0.03%
15	25	0.04%
16	8	0.01%
17	8	0.01%
18	9	0.02%
19	8	0.01%
20	6	0.01%
21	3	0.01%
22	3	0.01%
24	1	0.00%
25	2	0.00%
27	1	0.00%
28	3	0.01%
29	1	0.00%
30	3	0.01%

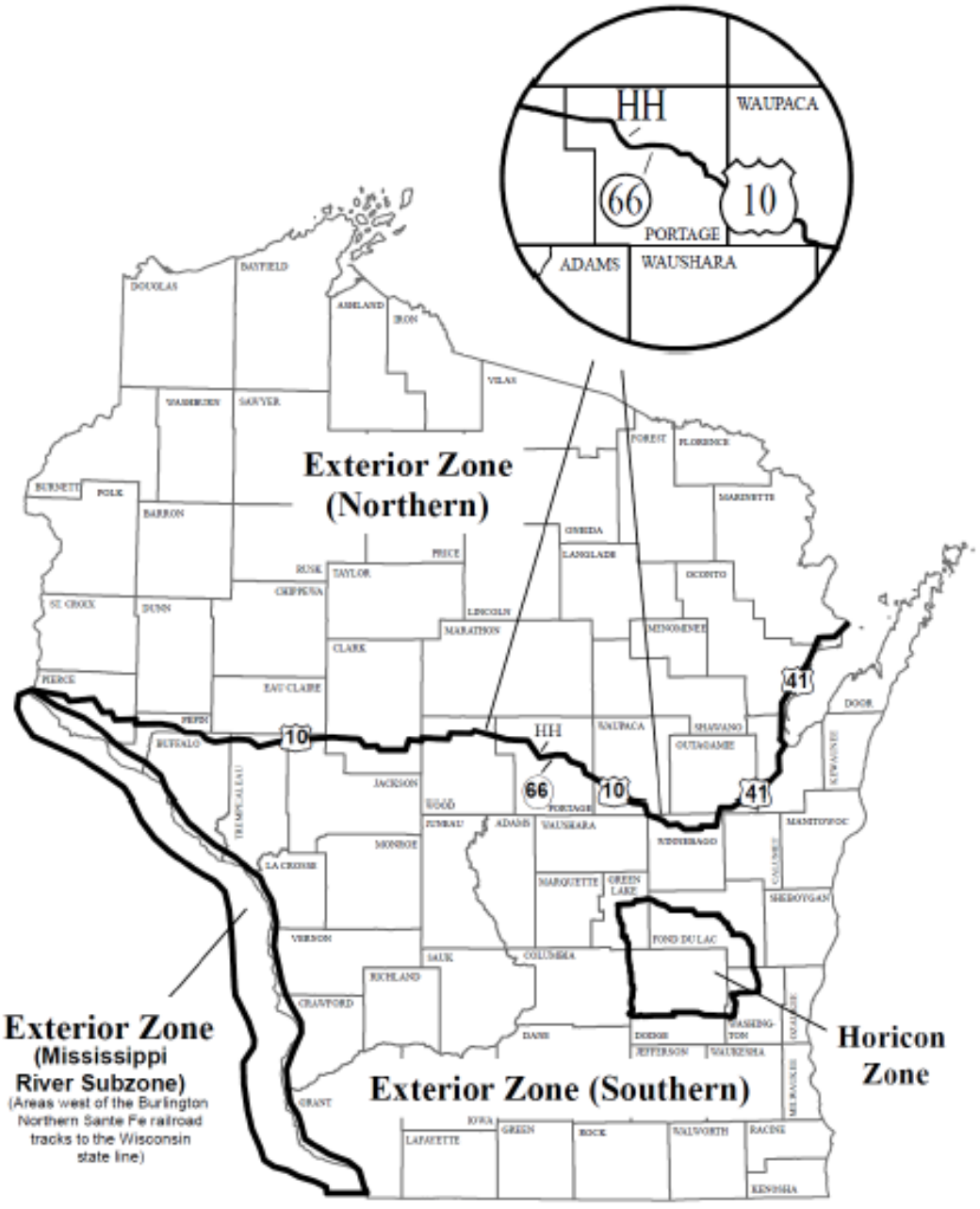

Figure 8. Canada goose management zones and subzones

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